## CLAIMS

1.      A microscope system for the analysis and evaluation of multiple colorings in a microscopic specimen, comprising: a scanning microscope that defines an illuminating light beam and a detected light beam; an SP module that is arranged in the detected light beam in front of at least one detector; and a computer system with a memory, wherein a database is provided in which discrete dye spectra are stored; the computer system encompasses a software program that performs a transformation of the data of the ascertained spectra and a transformation of the dye spectra stored in the database; and the software program allocates the transformed dye spectra to the measured spectra, in which context a comparison can be performed.

2.      The microscope system as defined in Claim 1, wherein the comparison is accomplished by way of a distance dimension in a projection space.

3.      The microscope system as defined in Claim 1, wherein the comparison is accomplished by way of the distance and the orientation of local clusters in the projection space.

4.      The microscope system as defined in Claim 1, wherein the transformed data can be presented on a display.

5.      A method for the analysis and evaluation of multiple colorings in a microscopic specimen using a scanning microscope, comprising the following steps:
   a)   recording spectra of dyes present in the specimen using an SP module, and ascertaining the electrical signals representing the spectra;
   b)   performing a transformation of the data of the ascertained spectra, performing the transformation of the dye spectra stored in a database;

c) dividing the transformation space into regions, each of which is allocated to a certain dye; and

d) allocating the dye spectra to the measured spectra by way of a comparison in the transformation space.

6. The method as defined in Claim 5, wherein the comparison of the ascertained spectra to the reference spectra is accomplished on the basis of a distance dimension.

7. The method as defined in Claim 5, wherein the comparison of the ascertained spectra to the reference spectra is accomplished on the basis of a distance dimension and the directions of the eigenvectors of the covariance matrix.

8. The method as defined in Claim 5, wherein the allocation of the dye spectra to the measured spectra is accomplished on the basis of the "nearest neighbor" method in the transformation space.